

PATENT ABSTRACTS OF JAPAN

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(21)Application number : 2001-035141

(71)Applicant : TORAY IND INC

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(72)Inventor : NAKATAKE KENJI

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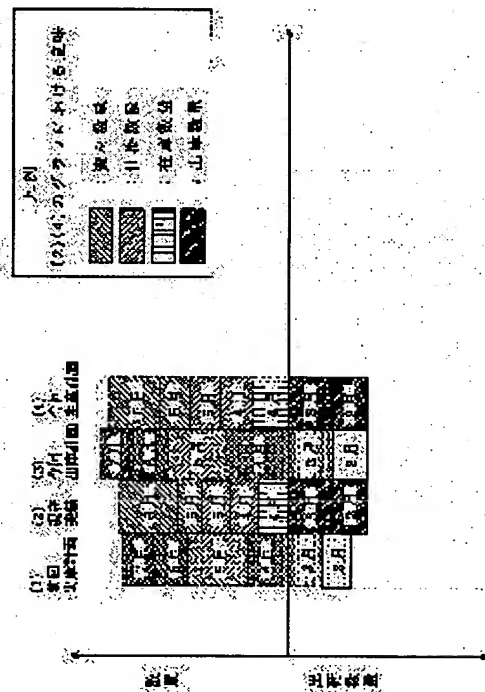
HANAMI MASATO

(54) METHOD AND DEVICE FOR SUPPORTING STORAGE/DEIVERY AND INVENTORY CONTROL, STORAGE MEDIUM AND PROGRAM

(57)Abstract:

PROBLEM TO BE SOLVED: To increase a workability, remarkably shorten a required time, increasing an accuracy, and remarkably relaxing an attributability when a production planning is performed.

SOLUTION: For a previous delivery plan, present performance, this delivery plan, this production plan, delivery amounts are disposed under a reference line, and stock amounts are disposed above the reference line for displaying as bar graphs.



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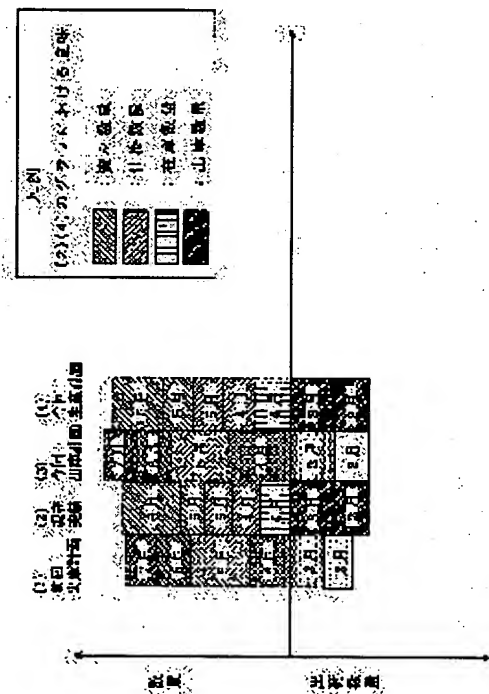
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CLAIMS

[Claim(s)]

[Claim 1] The ON appearance stock control exchange approach which creates the bar graph with which stock quantity is expressed above the datum line and shipment quantity is expressed under the datum line, respectively, and is characterized for the created bar graph by part for two or more products, and the thing which it arranges serially and is displayed for every administration object product.

[Claim 2] A bar graph is the ON appearance stock control exchange approach according to claim 1 which are the thing showing the thing, current leaving the garage, and the inventory track record of expressing the last leaving-the-garage plan, a thing showing this leaving-the-garage plan, and a thing showing the stock quantity computed by this production planning.

[Claim 3] The ON appearance stock control exchange approach according to claim 1 or 2 which classifies stock quantity into product stock quantity, mechanism stock quantity, and materials stock quantity, and displays it on this order.

[Claim 4] The ON appearance stock control exchange approach according to claim 3 which classifies product stock quantity and shipment quantity into serial quantity, and displays them in order of time series.

[Claim 5] The bar graph with which stock quantity is expressed above the datum line and shipment quantity is expressed under the datum line, respectively for every administration object product A bar graph creation maintenance means (5) to create as the thing showing the thing, current leaving the garage, and the inventory track record of expressing the last leaving-the-garage plan, the thing showing this leaving-the-garage plan, and a thing showing the stock quantity computed by this production planning, and to hold, and (6), ON appearance stock control exchange equipment characterized by including a part for two or more products, and a display means (7) to put in order serially and to display for the created bar graph.

[Claim 6] The storage with which the computer program which can perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4 was stored.

[Claim 7] The program for making a computer perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the approach of supporting ON appearance stock control using a bar graph, its equipment, a storage, and a program, if it says further a detail about the ON appearance stock control exchange approach, its equipment, a storage, and a program.

[0002]

[Description of the Prior Art] When performing production planning of a product from the former, if it puts in another way, they will be the next process of the process (self-process) which after process {itself has managed first from the index (high index of the need of products, such as atmospheric temperature and the weather, and relevance) which shows a market condition and a market condition, leaving-the-garage hysteresis, etc., and the process which uses the product (product) of a self-process. A consumer, a sale place enterprise, etc. are included. The leaving-the-garage plan (it is the plan of leaving the garage of the product to an after process, and a sale plan is meant when after processes are a consumer and a sale place enterprise.) of the product (the last object produced according to a self-process) to} is drawn up. And during the leaving-the-garage period of a product, this leaving-the-garage plan may be multiple-times-published, and may be changed.

[0003] Furthermore, it explains.

[0004] A. Compare with a leaving-the-garage plan the volume expected the inventory of the actual condition in a self-process (process which self has managed), and from now on in the phase where the leaving-the-garage plan of the product to an after process was drawn up, and compute a part for the excess and deficiency according to delivery date of the volume to a leaving-the-garage plan.

[0005] B. Draw up future production planning after considering the future operating ratio (hand opening situation) of a self-process and a facility, a staff's production capacity, and the inventory upper limit of a product after that.

[0006] C. Show the delivery date of materials required for production, and quantity to a before process (it is the process which offers or sells an ingredient to a self-process, and an external enterprise may correspond to this process) after performing requirements count of materials (ingredient required when producing a product) and considering the lot size of materials from production planning called for by B.

[0007] D. The amount (table showing the amount of materials in which delivery according to delivery date computed at the before process is possible based on production planning formed at the before process) which can be materials supplied is shown from a before process to the amount required of the shown materials. Based on the shown amount which can be materials supplied, an amount (what converted product quantity producible from materials quantity according to the delivery date of materials) producible [according to materials delivery date] is computed.

[0008] E. Compare the producible amount of D with production planning of B, and correct production planning of B.

[0009] F. Compare correction backward production planning and the leaving-the-garage plan of E, and change a leaving-the-garage plan about a difference. If the modification is accepted, production-

planning operation will be ended. On the contrary, when not consenting, or when a leaving-the-garage plan is changed with a market condition etc., the activity from A is repeated.

[0010]

[Problem(s) to be Solved by the Invention] Data required of the plan operation from up Norio and the data to create are as follows.

[0011] Need data about A: (last time and this time) A leaving-the-garage schedule, a stock list, a production-planning table, the creation data:production excess-and-deficiency chart (table having shown which has a difference between the shipments after correction to the volume expected by production planning before correction) about the production supply list A

Need data about B: A production capacity table, a production-planning table, a product inventory upper limit table (table having shown the maximum number of products which can keep a product inventory at a self-process), the creation data:production capacity master production plan table (table of production planning which was vacant with the production capacity of a self-process, and was computed only in the situation, without considering the amount of materials required for production of a product) about the production excess-and-deficiency chart B

Need data about C: A production capacity master production plan table, a material requirement conversion chart (table having shown the amount of materials required to carry out 1 product production), a materials lot-size table (table having shown the minimum lot size in which a material order placement is possible), the number upper limit table of materials inventories (table having shown the maximum number of materials which can keep a materials inventory at a self-process)

creation data [about C]: -- need data [about the material-order-placement document D]: -- the creation data:decision production-planning table (production-planning table which fulfilled all the conditions that should be considered when drawing up production planning) about the amount chart producible

[according to need data:materials delivery date] about a materials delivery schedule and the amount chart E producible [according to creation data:materials delivery date] about the material requirement conversion chart D, and the production capacity master production plan table E

Need data about F: Creation Data: Make about a definite production-planning table and the leaving-the-garage schedule F, and, as for the still more nearly above-mentioned need data and creation data, not all necessarily exist physically. Since the procedure of production-planning operation itself is simplified when it exists as the information and the memorandum for production planning or, these may not exist at all.

[0012] Consequently, the following inconvenience arises.

[0013] 1. There is inconvenience of taking the hugeness of data and the time and effort of retrieval.

[0014] Very mostly and generally, since these exist as separate data, in order to form production planning of one kind of product, data required as shown in the need data about operation at large, when performing production planning must discover and compare the part of the product from each data each time, and take very much time and effort.

[0015] 2. There is inconvenience called the formation of group people of production-planning operation.

[0016] Data seem to have to exist as information for a plan in many cases from the problem of acquisition of a vast quantity of data, and the time and effort of those comparisons as said A shows. For this reason, generally the situation that production planning can be drawn up only by a certain limited man has occurred.

[0017] 3. There is inconvenience called deficient generating of a plan.

[0018] Since huge time and effort, and personal information and an activity are needed for production planning as said A and B show, priority is given to the quickness of the planned creation, and simplicity over the completeness of a plan, and the process originally needed for creation is omitted in many cases. Consequently, a defect occurs in a plan and the opportunity loss of overstock or leaving the garage (sale), delivery date delay, etc. occur.

[0019] 4. There is inconvenience called deviation with a leaving-the-garage (sale) plan and production planning.

[0020] Although production should be essentially performed in order to leave the garage (sale), in many cases, production planning is performed in a place different from a leaving-the-garage (sale) plan. Therefore, the case where production planning does not suit the inclination of leaving the garage (sale) and a priority arises, and the opportunity loss of overstock or leaving the garage (sale), delivery date delay, etc. occur as a result.

[0021] 5. There is inconvenience of taking the time and effort of modification of production planning to modification of a leaving-the-garage (sale) plan.

[0022] Whenever a leaving-the-garage (sale) plan is changed, it is necessary to change production planning but, it is very time and effort to investigate how the leaving-the-garage (sale) plan of which product changed or how much it changed, and when drawing up production planning after modification, it takes time amount dramatically.

[0023] This invention is made in view of the above-mentioned trouble, and while being able to raise the workability in the case of carrying out production-planning operation etc., a duration can be shortened substantially and moreover accuracy is raised, and it aims at offering the ON appearance stock control exchange approach which can ease group human nature substantially, its equipment, a storage, and a program.

[0024]

[Means for Solving the Problem] The ON appearance stock control exchange approach of claim 1 creates the bar graph with which stock quantity is expressed above the datum line and it expresses shipment quantity under the datum line for every administration object product, respectively, and are a part for two or more products, and the approach of putting in order serially and displaying about the created bar graph.

[0025] The ON appearance stock control exchange approach of claim 2 is the approach of adopting the thing showing the thing, current leaving the garage, and the inventory track record of expressing the last leaving-the-garage plan as a bar graph, the thing showing this leaving-the-garage plan, and the thing showing the stock quantity computed by this production planning.

[0026] The ON appearance stock control exchange approach of claim 3 is the approach of classifying stock quantity into product stock quantity, mechanism stock quantity, and materials stock quantity, and displaying it on this order.

[0027] The ON appearance stock control exchange approach of claim 4 is the approach of classifying product stock quantity and shipment quantity into serial quantity, and displaying them in order of time series.

[0028] The ON appearance stock control exchange equipment of claim 5 above the datum line for every administration object product stock quantity What expresses the last leaving-the-garage plan for the bar graph with which shipment quantity is expressed under the datum line, respectively, A bar graph creation maintenance means to create as the thing showing current leaving the garage and an inventory track record, the thing showing this leaving-the-garage plan, and a thing showing the stock quantity computed by this production planning, and to hold, A part for two or more products and a display means to put in order serially and to display are included for the created bar graph.

[0029] The computer program to which the storage of claim 6 can perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4 is stored.

[0030] The program of claim 7 is for making a computer perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4.

[0031]

[Function] If it is the ON appearance stock control exchange approach of claim 1, above the datum line for every administration object product stock quantity Since the bar graph with which shipment quantity is expressed under the datum line, respectively is created and the created bar graph is displayed on a part for two or more products, and a time series target side by side Only by seeing a bar graph, anyone can grasp leaving the garage and an inventory to accuracy, and, moreover, can perform easily the comparison of modification of smooth production planning to modification of a leaving-the-garage plan, the shipment between two or more products, and an inventory.

[0032] If it is the ON appearance stock control exchange approach of claim 2, since the thing showing the thing, the present leaving the garage, and the inventory track record of expressing the last leaving-the-garage plan as a bar graph, the thing showing this leaving-the-garage plan, and the thing showing the stock quantity computed by this production planning will be adopted, in addition to an operation of claim 1, the validity of a plan can be judged to simplicity and accuracy by looking through these plans.

[0033] If it is the ON appearance stock control exchange approach of claim 3, since stock quantity will be classified into product stock quantity, mechanism stock quantity, and materials stock quantity and will be displayed on this order, in addition to an operation of claim 1 or claim 2, the inventory for every inventory gestalt can be grasped to simplicity and accuracy.

[0034] If it is the ON appearance stock control exchange approach of claim 4, since product stock quantity and shipment quantity will be classified into serial quantity and will be displayed in order of time series, in addition to an operation of claim 1 or claim 2, transition of stock quantity and shipment quantity can be grasped to simplicity and accuracy.

[0035] If it is ON appearance stock control exchange equipment of claim 5, for every administration object product with a bar graph creation maintenance means The bar graph with which stock quantity is expressed above the datum line and shipment quantity is expressed under the datum line, respectively It creates as the thing showing the thing, current leaving the garage, and the inventory track record of expressing the last leaving-the-garage plan, the thing showing this leaving-the-garage plan, and a thing showing the stock quantity computed by this production planning, and holds. With a display means The created bar graph can be put in order and *(ed) on a part for two or more products, and a time series target.

[0036] Therefore, only by seeing a bar graph, anyone can grasp leaving the garage and an inventory to accuracy easily, and, moreover, can perform easily the comparison of modification of smooth production planning to modification of a leaving-the-garage plan, the shipment between two or more products, and an inventory, and the validity of a plan can be judged to simplicity and accuracy by looking through these plans further.

[0037] If it is the storage of claim 6, since the computer program which can perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4 is stored, the same operation as any of claim 1 to claim 4 can be attained by performing this computer program by computer.

[0038] If it is the program of claim 7, the same operation as any of claim 1 to claim 4 can be attained by making a computer perform each step of which ON appearance stock control exchange approach of claim 1 to claim 4.

[0039]

[Embodiment of the Invention] Hereafter, with reference to an accompanying drawing, the ON appearance stock control exchange approach, its equipment, storage, and program of this invention are explained to a detail.

[0040] Drawing 1 is the block diagram showing one embodiment of the ON appearance stock control exchange equipment of this invention.

[0041] This ON appearance stock control exchange equipment The number of total orders of materials to current, The materials quantity input section 1 for inputting [number / of total shipment / the number of total production schedules (the number of mechanisms), the completed number of total products (the number of inventories), and] about a track record value or each planned value, The mechanism quantity input section 2, the stock quantity input section 3, the shipped quantity input section 4, and the total sections 1a, 2a, 3a, and 4a that total each inputted quantity for every (every [for example,] month) unit period for every track record value or planned value, Subtraction section 3b subtracted from the stock quantity which had the inputted shipped quantity totaled for every unit period, Subtraction section 2b subtracted from the mechanism quantity by which only the increment of stock quantity was totaled for every unit period, Subtraction section 1b subtracted from the materials quantity by which only the increment of mechanism quantity was totaled for every unit period, While arranging caudad the total result from total section 4a currently held at the attaching part 5 which holds the subtraction result from the total result from total section 4a for every unit period, subtraction section 1b, 2b, and 3b,

respectively, and the attaching part 5 rather than the datum line It has the display 7 which displays the subtraction result from subtraction section 1b, 2b, and 3b in visible as a bar graph [result / by the arrangement section 6 arranged more nearly up than the datum line and the arrangement section 6 / arrangement] (it accumulates and a bar graph is called hereafter) on the basis of the datum line.

[0042] However, each of these configuration sections do not need to exist physically and a computer may be controlled to perform processing corresponding to an operation of these configuration sections. Of course, the storage with which the computer program for controlling a computer in this way was stored is prepared beforehand, and it may be made to perform a computer program by computer.

[0043] It is desirable that it is what is arranged that a required result should be chosen from the total result currently held at the attaching part 5 and a subtraction result as said arrangement section 6, and the table of a leaving-the-garage plan, the present track record, this time leaving-the-garage plan, and this time production planning should be carried out last time {refer to (1), (2), (3), and (4) in drawing 2 }.

[0044] Here, a leaving-the-garage plan graph accumulates and bar-graph-izes last time that to which the leaving-the-garage plan before newly drawing up a plan was performed. It accumulates and the planned quantity of each leaving the garage at the event (it is the point of expressing time amount, such as a year, the moon, a week, a day, and time amount) is serially shown in a bar graph above from the bottom. However, the amount of leaving the garage of the last plan at the event before [of a plan creation time point] one is caudad displayed rather than the datum line, and the shipment of a track record is displayed about the amount of leaving the garage before it.

[0045] Of course, these count is performed whenever it works ON appearance stock control exchange equipment.

[0046] Current track record graphs are a shipment, an inventory, and a bar graph that began and accumulated the amounts of track records of each process, such as an amount and the amount of materials, upwards from the bottom in order. However, about the amount of leaving the garage, it is caudad displayed rather than the datum line. Moreover, about the amount of leaving the garage, it is leaving the garage at the event when, or is classified with the event and amount. an inventory -- it begins and is further subdivided by the amount which can be left, and the event eventually as a product in each process about an amount and the amount of materials. It is written by the subdivided part when it can ship, respectively. Moreover, when it is over the regular upper limit, as for an inventory, the amount of materials, etc., expressing as specific colors, such as red, is desirable.

[0047] Of course, these count is performed whenever it works ON appearance stock control exchange equipment.

[0048] A leaving-the-garage plan graph accumulates and bar-graph-izes that to which the leaving-the-garage plan was newly performed this time this time. It accumulates and the bar graph leaving-the-garage [to the top from the bottom]-serially-planned quantity at each event is shown. However, about the amount of leaving the garage at the event before a plan creation time point, a track record is caudad displayed rather than the datum line.

[0049] Of course, these count is performed whenever it works ON appearance stock control exchange equipment.

[0050] Production-planning graphs are a shipment, an inventory, and a bar graph that it began and was accumulated upwards from the bottom according to planned quantity of each process, such as an amount and the amount of materials, this time about production planning which the person in charge of production planning newly drew up this time. However, about the amount of leaving the garage, a track record is caudad displayed rather than the datum line. Moreover, about the amount of leaving the garage, it is leaving the garage at the event when, or is classified with the event and amount. an inventory -- it begins and is further subdivided by the amount which can be left, and the event eventually as a product in each process about an amount and the amount of materials. It is written by the subdivided part when it can ship, respectively. Moreover, when it is over the regular upper limit, as for an inventory, the amount of materials, etc., expressing as specific colors, such as red, is desirable.

[0051] Of course, these count is performed whenever it works ON appearance stock control exchange equipment.

[0052] If drawing 2 accumulates using the ON appearance stock control exchange equipment of drawing 1 and a bar graph is displayed, the following operation effectiveness can be done so.

[0053] (1) Since a leaving-the-garage plan (newest thing among the leaving-the-garage plans formed in the past), and this last leaving-the-garage plan (plan of leaving the garage which stood newly according to the actual condition, a market condition, etc. of leaving the garage, and was changed) and last production planning are displayed side by side, the modification degree and the reasons for modification (modification of the amount of total leaving the garage and leaving-the-garage timing bending forward after delivery etc.) understand clearly.

[0054] And since current actual production is displayed to this leaving-the-garage plan, the blurring can be checked at a glance and distinction of a product to be produced and the product which is not so can be performed momentarily urgently.

[0055] Smooth production planning to modification of a leaving-the-garage plan can be changed these results.

[0056] (2) Since (an after process, a before process, a self-process), and what are shown the graph table by (a product, an unfinished product, materials), and the concept (position concept) how many they [a **** and] can be passed at an after [how much] process when where, leaving-the-garage planned charge and production-planning charge having what in the whole process how many and it can check at a glance when it can use at an after process.

[0057] Consequently, simple grasp of the whole process by the screen display in which the position concept was included can be performed.

[0058] (3) Many which products are leaving the garage by accumulating and displaying a bar graph on two or more parts for a product, and a screen side by side horizontally, or the amount of leaving the garage of a track record and an inventory (in-process inventory, the amount of materials) show by one division. Thereby, the comparison of the comparison of the leaving-the-garage situation of all the product classes dealt with at a self-process, an inventory (inventory risk), and the amount of materials (materials risk) can be performed.

[0059] Consequently, the comparison of the amount of leaving the garage between two or more products and an inventory can be performed at a glance.

[0060] (4) Although operation became the excess of manday or the operation process was carelessly simplified on the conventional production-planning operation in order to have to compare and refer to two or more data, the time and effort of a data comparison and reference can be saved to some extent with above equipment.

[0061] Consequently, improvement in the list nature of data and improvement in a plan process can be attained.

[0062] (5) Planned quantity about leaving the garage, production, materials, etc. can be made easy to adjust by the visible display by above equipment, by sharing this visible display not only with a self-process but with a before process and an after process, since the track record of a leaving-the-garage plan and leaving the garage, the track record of production, and production planning can be looked through.

[0063] Consequently, the increase in efficiency of adjustment operation can be attained by sharing a visible display.

[0064] Drawing 3 is drawing showing other examples of a display.

[0065] this -- it accumulates and the bar graph shows serially the in-process inventory for every size of Y shirt, the inventory, and the distribution cost.

[0066] these -- if it accumulates and a bar graph is compared, so that it accumulated and the bar graph has fallen as a whole -- good -- selling -- **** -- reverse -- as a whole -- not much the bottom -- **** -- it turns out that it does not sell, so that it is absent.

[0067] Therefore, it can be coped with [making the in-process inventory of best-selling size increase etc., and] easily.

[0068] Drawing 4 is drawing showing the example of a display of further others.

[0069] this -- it accumulates and the bar graph shows serially change of the in-process inventory of Y

shirt of specific size, an inventory, and a distribution cost.

[0070] If it accumulates and a bar graph is compared, it can grasp [these] easily whether the distribution cost is increasing favorably. Therefore, an inventory can prevent increasing beyond the need by making in-process inventory increase, when the distribution cost is increasing favorably, preventing the increment in in-process inventory in the case of reverse, or controlling.

[0071]

[Effect of the Invention] Invention of claim 1 does so the characteristic effectiveness that anyone can grasp leaving the garage and an inventory to accuracy easily, and can moreover perform easily the comparison of modification of smooth production planning to modification of a leaving-the-garage plan, the shipment between two or more products, and an inventory only by seeing a bar graph.

[0072] Invention of claim 2 does so the characteristic effectiveness that the validity of a plan can be judged to simplicity and accuracy by looking through these plans in addition to the effectiveness of claim 1.

[0073] In addition to the effectiveness of claim 1 or claim 2, invention of claim 3 does so the characteristic effectiveness that the inventory for every inventory gestalt can be grasped to simplicity and accuracy.

[0074] In addition to the effectiveness of claim 1 or claim 2, invention of claim 4 does so the characteristic effectiveness that transition of stock quantity and shipment quantity can be grasped to simplicity and accuracy.

[0075] Only by seeing a bar graph, anyone can grasp leaving the garage and an inventory to accuracy easily, and, moreover, can perform easily the comparison of modification of smooth production planning to modification of a leaving-the-garage plan, the shipment between two or more products, and an inventory, and invention of claim 5 does so the characteristic effectiveness that the validity of a plan can be judged to simplicity and accuracy, by looking through these plans further.

[0076] Invention of claim 6 does so the same effectiveness as any of claim 1 to claim 4 they are by performing this computer program by computer.

[0077] Invention of claim 7 does so the same effectiveness as any of claim 1 to claim 4 they are.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing one embodiment of the ON appearance stock control exchange equipment of this invention.

[Drawing 2] It is drawing showing an example of a visible display.

[Drawing 3] It is drawing showing other examples of a visible display.

[Drawing 4] It is drawing showing the example of further others of a visible display.

[Description of Notations]

5 Attaching Part 6 Arrangement Section

7 Display

[Translation done.]

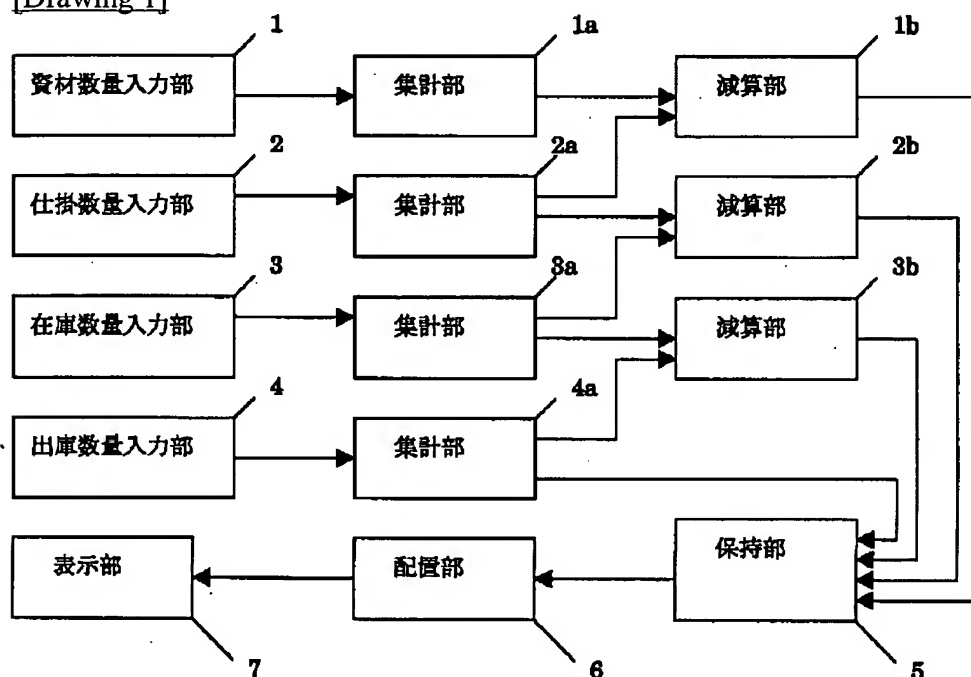
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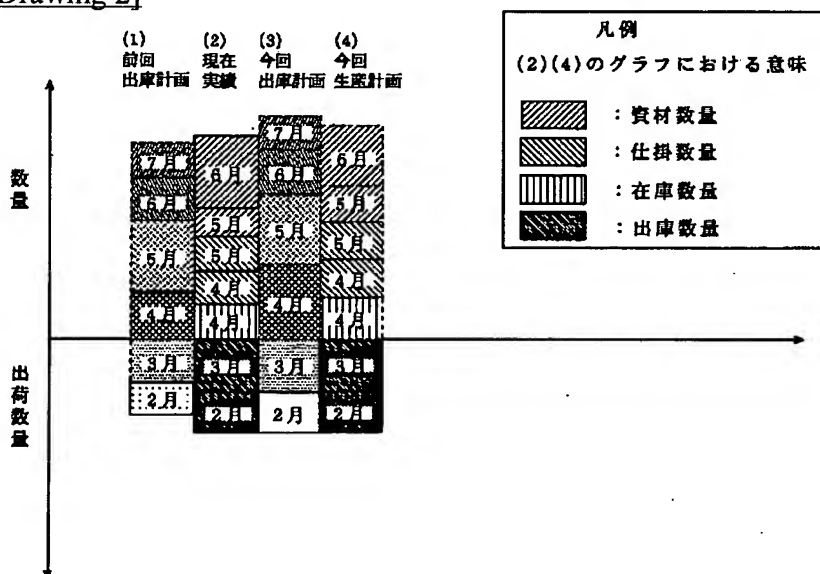
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DRAWINGS

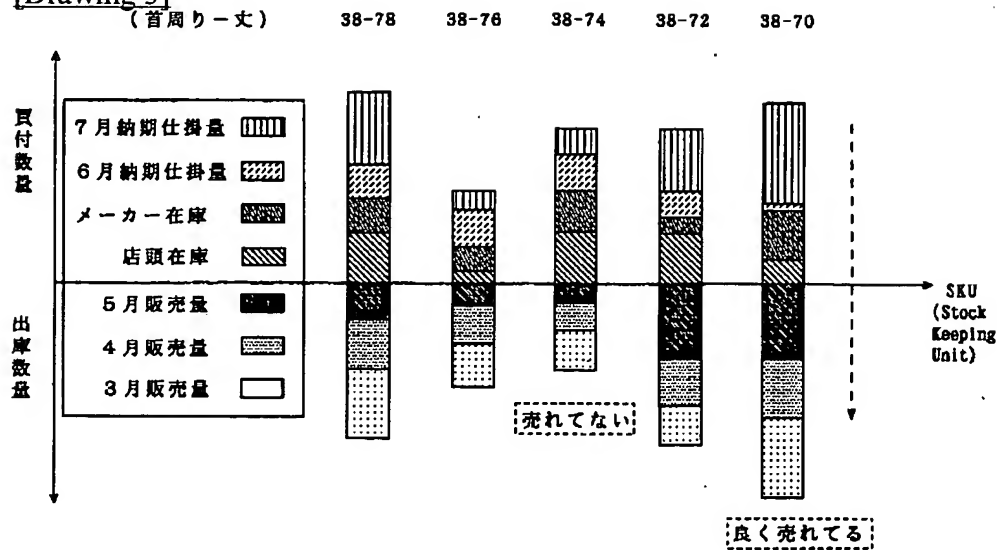
[Drawing 1]



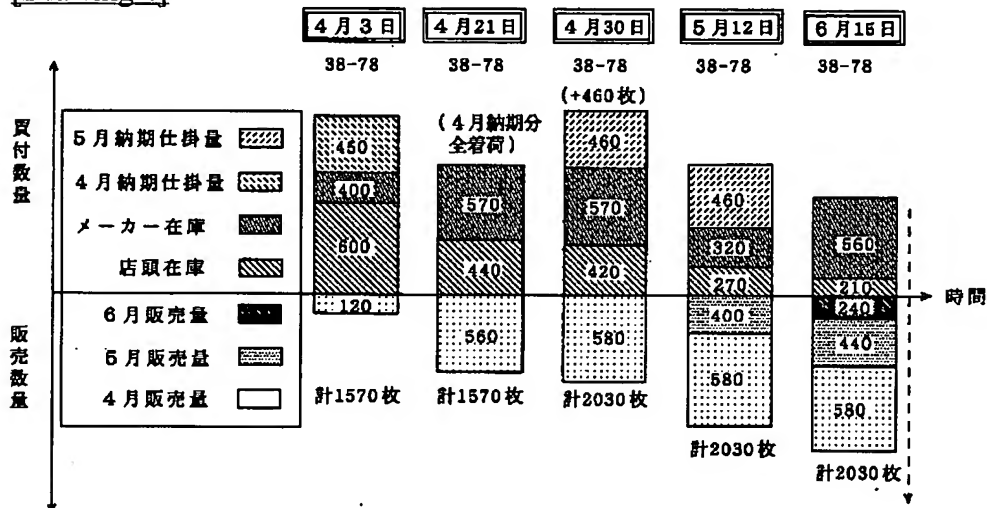
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]